

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli;

nucleotides 6885-6860 (SEQ ID NO:47), 7330-7306 (SEQ ID NO:50), 7800-7775 (SEQ ID NO:51), 8812-8787 (SEQ ID NO:54), and 8185-8167 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Eli; and

C3
could
a nucleotide sequence that is not identical to anyone of SEQ ID NO:46, SEQ ID NO:47, SEQ ID NO:48, SEQ ID NO:49, SEQ ID NO:50, SEQ ID NO:51, SEQ ID NO:52, SEQ ID NO:53, SEQ ID NO:54, SEQ ID NO:55, SEQ ID NO:56, SEQ ID NO:57, or SEQ ID NO:68, but is nonetheless capable of hybridizing with a nucleotide sequence of the *env* gene of HIV-1 Bru, HIV-1 Mal, and HIV-1 Eli.--

REMARKS

Claims 27-48 are pending in this application. Claims 27, 28 and 34-37 have been amended to include the appropriate SEQ ID NOs. Claims 38-48 have been added. Claims 38-48 mirror claims 27-37, except claims 38-48 include an additional recitation, "a nucleotide sequence that is not identical to anyone of [the recited SEQ ID NOs.] but is nonetheless capable of hybridizing with a nucleotide sequence of the *env* gene of HIV-1, Bru, HIV-1 Mal, and HIV-1 Eli. Support for claims 38-48 can be found in the specification, including at page 4, lines 16-20.

In a Communication dated December 4, 2001, the Office noted that this application failed to comply with the requirements of the sequence rules. Specifically, the Office noted that applicants were required to add SEQ ID NOs. to all specific

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sequences recited in the specification and claims. Applicants amended the specification to include SEQ ID NOs. in the Preliminary Amendment filed September 26, 2000. By this Response, applicants amend the pending claims to add the appropriate SEQ ID NOs. Support for this amendment can be found, for example, at page 9 of the specification. Thus, no new matter has been added.


The Office further noted that several of the claims were in improper "Use of ..." form or contained improper multiple dependencies. Applicants note that original claims 1-26 were canceled and claims 27-33 were added in the September 26, 2000, Preliminary Amendment. Claims 34-37 were added in the Supplemental Amendment dated November 28, 2000. None of claims 27-37 contains improper multiple dependencies or "use of" language.

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Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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Dated: January 31, 2002

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APPENDIX

IN THE CLAIMS:

Please amend the claims as follows:

27. (Amended) A polypeptide fragment of a viral protein encoded by a nucleotide sequence from a viral genome selected from the group consisting of HIV-1, HIV-2, and SIV and expressed by a method comprising:

a) amplifying the nucleic acid encoding said polypeptide with at least two primers, wherein said first primer is complementary to a region of nucleotides of the nucleic acid of said genome, said second primer is complementary to a region of nucleotides of the strand of DNA complementary to said nucleic acid of said genome, wherein said regions of nucleotides are separated by about 100 to about 1100 base pairs when said complementary strands are hybridized to form one double-stranded nucleic acid, and said primers are selected from the group of nucleotides oriented in the 5' to 3' direction consisting of:

SEQ ID NO:68:

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), and nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal;

nucleotides 6928-6903 (SEQ ID NO:47), 7373-7349 (SEQ ID NO:50), 7846-7821 (SEQ ID NO:51), 8861-8836 (SEQ ID NO:54), and 8231-8213 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Mal;

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli; and

nucleotides 6885-6860 (SEQ ID NO:47), 7330-7306 (SEQ ID NO:50), 7800-7775 (SEQ ID NO:51), 8812-8787 (SEQ ID NO:54), and 8185-8167 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Eli;

- b) introducing said amplified nucleotide sequence into a vector;
- c) transforming a host cell with said vector;
- d) placing said transformed host cell in culture; and
- e) recovering said polypeptide from said culture.

28. (Amended) A polypeptide fragment of a viral protein encoded by a nucleotide sequence from a viral genome selected from the group consisting of HIV-1, HIV-2, and SIV and expressed by a method comprising:

- a) amplifying the nucleic acid encoding said polypeptide with at least two primers, wherein said first primer is complementary to a region of nucleotides of the nucleic acid of said genome, said second primer is complementary to a region of nucleotides of the strand of DNA complementary to said nucleic acid of said genome,

wherein said regions of nucleotides are separated by about 100 to about 1100 base pairs when said complementary strands are hybridized to form one double-stranded nucleic acid, and said primers are selected from the group of nucleotides oriented in the 5' to 3' direction consisting of:

MMy5: CCA ATT CCC ATA CAT TAT TGT GCC CC (SEQ ID NO:46);
MMy5a: GGG GCA CAA TAA TGT ATG GGA ATT GG (SEQ ID NO:47);
MMy6: AAT GGC AGT CTA GCA GAA GAA GA (SEQ ID NO:48);
MMy7: ATC CTC A[0]GG AGG GGA CCC AGA AAT T (SEQ ID NO:49);
MMy7a: AAT TTC TGG GTC CCC TCC TGA GGA T (SEQ ID NO:50);
MMy8: GTG CTT CCT GCT GCT CCC AAG AAC CC (SEQ ID NO:51);
MMy8a: GGG TTC TTG GGA GCA GCA GGA AGC AC (SEQ ID NO:52);
MMy9: ATG GGT GGC AAG TGG TCA AAA AGT AG (SEQ ID NO:53);
ATG GGT GGC AAA TGG TCA AAA AGT AG (SEQ ID NO:68);
MMy9a: CTA CTT TTT GAC CAC TTG CCA CCC AT (SEQ ID NO:54);
MMy78: TAT TAA CAA GAG ATG GTG G (SEQ ID NO:55);
MMy89: CCA GCA AGA AAA GAA TGA A (SEQ ID NO:56); and
MMy89a: TTC ATT CTT TTC TTG CTG G (SEQ ID NO:57);

- b) introducing said amplified nucleotide sequence into a vector;
- c) transforming a host cell with said vector;
- d) placing said transformed host cell in culture; and
- e) recovering said polypeptide from said culture.

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34. (Amended) A purified polynucleotide that encodes a polypeptide, wherein the polynucleotide is selected from the group consisting of:

SEQ ID NO:68:

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), or 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), and nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), or nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ

34. (Amended) A purified polynucleotide that encodes a polypeptide, wherein the polynucleotide is selected from the group consisting of:

SEQ ID NO:68:

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), or 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), and nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), or nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ

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ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), or 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal;

nucleotides 6928-6903 (SEQ ID NO:47), 7373-7349 (SEQ ID NO:50), 7846-7821 (SEQ ID NO:51), 8861-8836 (SEQ ID NO:54), and 8231-8213 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Mal, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6928-6903 (SEQ ID NO:47), 7373-7349 (SEQ ID NO:50), 7846-7821 (SEQ ID NO:51), 8861-8836 (SEQ ID NO:54), or 8231-8213 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Mal;

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), or 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli; and

nucleotides 6885-6860 (SEQ ID NO:47), 7330-7306 (SEQ ID NO:50), 7800-7775 (SEQ ID NO:51), 8812-8787 (SEQ ID NO:54), and 8185-8167 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Eli, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6885-6860 (SEQ ID NO:47), 7330-7306 (SEQ ID NO:50), 7800-7775 (SEQ ID NO:51), 8812-8787 (SEQ ID NO:54), or 8185-8167 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Eli.

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35. (Amended) The purified polynucleotide of claim 34, wherein the polynucleotide is selected from the group consisting of:

SEQ ID NO:68:

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), or 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), or 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal; and

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli, or a nucleotide sequence of a virus of the HIV-1 group that corresponds to any one of nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ

ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), or 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli.

36. (Amended) The polynucleotide according to claim 35, wherein the polynucleotide is selected from the group consisting of:

SEQ ID NO:68;

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal; and

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli.

37. (Amended) The polynucleotide according to claim 34, wherein the polynucleotide is selected from the group consisting of:

SEQ ID NO:68;

nucleotides 6905-6930 (SEQ ID NO:46), 7055-7077 (SEQ ID NO:48), 7360-7384 (SEQ ID NO:49), 7832-7857 (SEQ ID NO:52), 8844-8869 (SEQ ID NO:53), 7629-7647 (SEQ ID NO:55), and 8224-8242 (SEQ ID NO:56) of the *env* gene of HIV-1 Bru;

nucleotides 6930-6905 (SEQ ID NO:47), 7384-7360 (SEQ ID NO:50), 7857-7832 (SEQ ID NO:51), 8869-8844 (SEQ ID NO:54), and nucleotides 8242-8224 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Bru;

nucleotides 6903-6928 (SEQ ID NO:46), 7053-7075 (SEQ ID NO:48), 7349-7373 (SEQ ID NO:49), 7821-7846 (SEQ ID NO:52), 7612-7630 (SEQ ID NO:55), 8213-8231 (SEQ ID NO:56), and 8836-8861 (SEQ ID NO:53) of the *env* gene of HIV-1 Mal;

nucleotides 6928-6903 (SEQ ID NO:47), 7373-7349 (SEQ ID NO:50), 7846-7821 (SEQ ID NO:51), 8861-8836 (SEQ ID NO:54), and 8231-8213 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Mal;

nucleotides 6860-6885 (SEQ ID NO:46), 7010-7032 (SEQ ID NO:48), 7306-7330 (SEQ ID NO:49), 7775-7800 (SEQ ID NO:52), 8787-8812 (SEQ ID NO:53), 7572-7590 (SEQ ID NO:55), and 8167-8185 (SEQ ID NO:56) of the *env* gene of HIV-1 Eli; and

nucleotides 6885-6860 (SEQ ID NO:47), 7330-7306 (SEQ ID NO:50), 7800-7775 (SEQ ID NO:51), 8812-8787 (SEQ ID NO:54), and 8185-8167 (SEQ ID NO:57) of a nucleic acid sequence complementary to the *env* gene of HIV-1 Eli.

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